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ORIGINAL

OUR FILE NO.
0883-101-60

November 24, 1998

Ms. Magalie R. Salas
Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: Petition to Amend DTV Table of Allotments
Spokane, Washington

Dear Ms. Salas:

Transmitted herewith, on behalf of Spokane School District #81, licensee of noncommercial educational Television Station KSPS, Spokane, Washington, are the original and four copies of a Petition for Rule Making, which proposes the substitution of DTV Channel *8 for DTV Channel *39 at Spokane, Washington.

No filing fee is required with this Petition.

Please refer any questions concerning this matter directly to this office.

Respectfully submitted,

John Crigler

JC:ah
Enclosure
cc: Gordon Godfrey, Television Branch
Robert Eckert, OET

Before The

Federal Communications Commission

Washington, D.C. 20554

In the Matter of:	)	
	)	
Amendment of Section 73.622	)	
of the Commission's Rules	)	MM Docket No.
DTV Table of Allotments	)	RM
	)	
Spokane, Washington	)	

TO: Chief, Mass Media Bureau

PETITION FOR RULE MAKING

Spokane School District #81 ("SSD"), pursuant to Sections 1.401 and 73.622 of the Commission's Rules, hereby requests the amendment of the Digital Television ("DTV") Table of Allotments to substitute DTV Channel *8 in lieu of DTV Channel *39 for use at Spokane, Washington. Specifically, SSD proposes to amend Section 73.622(b), as follows:

CITY, STATE	CHANNEL NUMBER PRESENT	CHANNEL NUMBER PROPOSED
Spokane, Washington	13, 15, 20, 30, 36, *39	*8, 13, 15, 20, 30, 36

As demonstrated in the attached Engineering Report, Channel *8 can be substituted for Channel *39 at Spokane, Washington in full compliance with the technical criteria set forth in Section 73.623(c) of the Commission's

Rules. ERP has been calculated to replicate the current Grade B coverage contour. The proposal will thus satisfy the principal city contour requirement of Section 73.625(a). Table 3 of the Engineering Report demonstrates that the proposed DTV re-allotment will result in interference affecting less than one percent (1%) of the population served by each of three domestic stations: KSPS-TV, KPAX-TV, and DTV-8 in Pendleton, Oregon. In the event that such interference is not considered *de minimus*, SSD requests a waiver of Sections 73.612 and 73.623(c)(2) to permit the small amount of interference caused.

The Engineering Report includes a detailed interference study of the effect of the proposed re-allotment on Canadian analog station CKTN-TV at Trail, British Columbia. The study indicates that predicted interference will occur only on peaks of high, uninhabitable, mountainous terrain. SSD respectfully respects that Canada be notified of the instant proposal and that Canadian concurrence be requested.

The proposed re-allocation would permit SSD to conserve its limited resources and devote them to its public service obligations. The re-allotment proposed in this Petition would entail several benefits. SSD could use a single antenna for both its current NTSC operation and its DTV operation and avoid the cost of acquiring and installing a new UHF antenna. SSD could economize on transmitter costs: a DTV transmitter for a VHF frequency costs less than a transmitter for a UHF frequency. SSD could economize on its physical plant: SSD's transmitter building can house a VHF transmitter but would have to be enlarged to accommodate a UHF transmitter. SSD could economize on

operating costs: those costs are far less for a VHF than for a UHF transmitter. SSD could deliver a better DTV to the public: in the mountainous terrain of the Spokane market a VHF frequency is more effective than a UHF frequency for delivering a TV signal.

All told, SSD estimates that the proposed re-allocation would save over a million dollars that would be required in order to convert to DTV operation on Channel *39. For a noncommercial licensee, those savings are enormous. There is, thus, no doubt that the public interest would be served by the re-allotment proposed.

Accordingly, for the foregoing reasons, SSD requests that the Commission institute a rule making proceeding to amend Section 73.622(b) by substituting DTV *8 for DTV *39 at Spokane, Washington.

Respectfully submitted,

SPOKANE SCHOOL DISTRICT #81

By: _____
John Crigler
Its Attorney

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November 24, 1998

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ENGINEERING STATEMENT

PETITION FOR RULEMAKING TO AMEND SECTION 73.622 OF THE RULES AND REGULATIONS FOR THE FEDERAL COMMUNICATIONS COMMISSION

TO ASSIGN DTV CHANNEL 8 FOR USE AT SPOKANE, WASHINGTON

SPOKANE SCHOOL DISTRICT #81

11/98

ENGINEERING STATEMENT

This Engineering Statement has been prepared on behalf of Spokane School District #81 ("SSD"), in support of a Petition for Rulemaking to amend §73.622 of the Commission's Rules to assign DTV Channel 8 in lieu of DTV Channel 39 for use at Spokane, Washington.

SSD is the licensee of analog television station KSPS(TV) at Spokane, Washington. KSPS(TV) operates on NTSC channel 7. In the Commission's Memorandum Report and Order on Reconsideration of the Sixth Report and Order on Advanced Television,[1] KSPS(TV) was allotted DTV channel 39 as a "paired" DTV channel. SSD wishes to substitute DTV channel 8 for DTV channel 39, in order to take advantage of recent engineering developments which indicate that digital television can be successfully implemented on N+1 channels.

The proposed substitution of DTV channel 8 for DTV channel 39 will allow SSD to utilize a single antenna for both NTSC channel 7 and DTV channel 8 operation. It will also allow KSPS(TV), a non-commercial television station and PBS affiliate, to operate its digital television facility with a smaller transmitter and at a much lower ERP. This will result in a significant savings on the station's electrical bill, and will allow the station to devote a greater share of its annual budget to the acquisition and broadcast of quality programming.

[1] See MM Docket 87-268, Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, FCC 97-115, released February 23, 1998.

DTV Operation on Channel 8

KSPS(TV) operates at a height above average terrain of 558 meters. The calculated maximum ERP for operation on DTV channel 8 at 558 meters HAAT at the KSPS site is 21.6 kilowatts. This figure refers only to the maximum ERP that may be achieved by the DTV station. Actual reference ERP values vary by azimuth. However, for the purposes of the allocation study discussed below, omnidirectional operation at 21.6 kW has been assumed, in order to present a "worst case" analysis.

Domestic Allocation Considerations

The time-shared "HDTV" computer program offered by the National Telecommunications and Information Administration's *TA Services* in Boulder, Colorado was employed as the method for coverage and interference prediction. The HDTV computer program has been developed in close coordination with the Commission's OET staff, and utilizes similar methodology as the computer program used by the Commission to develop the DTV Table of Allotments. Predictions included "clipping" the extent of protected coverage as specified under §73.623(c)(2) at the Grade B contour distance for analog stations per §73.684 and at the DTV coverage contour distance for DTV assignments per §73.625(b). It is believed that the HDTV program offered by *TA Services* is compliant with the FCC's Office of Science and Technology Bulletin 69 Longley-Rice Methodology for Evaluating TV Coverage and Interference ("OET-69"), July 2, 1997.

Longley-Rice computer program input data for the proposed Spokane DTV-8 allotment, following the guidelines established under OET-69, is supplied as Table 1.

The results indicate that the proposed Spokane DTV-8 allotment is predicted to cause interference to KSPS-TV, KPAX-TV, and the DTV channel 8 allotment at Pendleton. (Per Appendix B of the Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order in MM Docket 87-268, the Pendleton DTV-8 allotment is not predicted to receive interference to 10% or more of its Noise Limited service population.) Table 2 lists the TV and DTV facilities studied and, for those facilities predicted to receive interference from Spokane DTV-8, the total population predicted to receive interference.

Table 3 demonstrates that the proposed Spokane DTV-8 allotment will cause interference to less than 1% additional population for KSPS-TV, KPAX-TV, and Pendleton DTV-8. Therefore, this proposal is believed to comply with the provisions of §73.623(c), regarding the minimum technical criteria for the modification of DTV allotments included in the initial DTV Table of Allotments.

Table 1
Interference Analysis Input Data
Proposed Spokane DTV-8 Allotment

Communications System Performance Model
Input Summary
6-Nov-98 09:31:38

Process Filename: CS038Nov0698C.ques

1)	Model:	Point-to-point irregular terrain model
2)	Output option:	Field intensity
3)	Length units:	Metric (km and m)
4)	Service Application:	Broadcast
5)	Results option:	None
	FAX number:	000-000-0000
6)	Location variability:	50.00 %
7)	Time availability:	10.00 %
8)	Situation variability:	50.00 %
10)	Frequency:	183.000 MHz
11)	Polarization:	Horizontal
12)	Conductivity:	.005 S/m
13)	Dielectric constant:	15.0
14)	Climate zone:	Continental temperate
20)	Transmitter name:	DKSPS-8
21)	Transmitter location:	

Latitude		Longitude	
Deg N		Deg W	
47.5761	47,34,34.0	117.2994	117,17,58.0

22)	Xmtr site elevation:	1085.0 m	3559.7 ft
23)	Xmtr ant ht AMSL:	1274.00 m	4179.79 ft
23)	Xmtr ant ht AGL:	189.00 m	620.08 ft
24)	Transmitter radiation option:		ERP
24)	Effective Radiated Power:		21600.0 W
	Effective Isotropic Radiated Power:		35438.9 W
30)	Transmitter ant horiz pattern:		Omnidirectional

Table 1
Interference Analysis Input Data
Proposed Spokane DTV-8 Allotment
(Continued)

32) Transmitter ant vert pattern: Beam tilt, directional

Vertical directional pattern data

No.	Elevation (deg)	Relative field radiation	Gain relative to pattern maximum (dB)
1	-10.00	.15000	-16.48
2	-9.00	.15000	-16.48
3	-8.00	.15000	-16.48
4	-7.00	.15000	-16.48
5	-6.00	.15000	-16.48
6	-5.00	.20000	-13.98
7	-4.00	.21000	-13.56
8	-3.50	.23500	-12.58
9	-3.00	.26000	-11.70
10	-2.50	.46000	-6.74
11	-2.00	.69000	-3.22
12	-1.50	.88000	-1.11
13	-.75	1.00000	.00
14	.00	.88000	-1.11
15	.50	.69000	-3.22

40) Rcvr ant ht above ground: 9.10 m 29.86 ft
56) Corporate name: TA Services
57) Color option: B & W
58) Scale option: No Scale
59) Quality option: High
60) Plot name: LR 50/10
62) Plot center:

Latitude Deg N		Longitude Deg W	
47.5761	47,34,34.0	117.2994	117,17,58.0

63) Plot size: 550.00 km 341.75 mi
64) Plot Roads option: No Roads
66) Field intensity contour levels:
1) 35.80 dBuV/m

Table 1
Interference Analysis Input Data
Proposed Spokane DTV-8 Allotment
(Continued)

66) Contour Legend label: Field Intensity(dBuV/m)
66) Contour labels and colors:

	Contour levels	Labels	Colors
1	Less than 35.80	Less than 35.80	Blue
2	Greater than 35.80	Greater than 35.80	Clear

67) Political boundaries: County and State
68) Landmarks: None

Table 2
Interference Analysis Results Summary

Station	City, State	Channel	Distance (km)	Bearing (°T)	Predicted Interference to Population of Listed Station from Spokane DTV-8
KSPS-TV	Spokane, WA	7	0	0	253
KCFW-TV	Kalispell, MT	9	224.4	76.4	0
KPAX-TV	Missoula, MT	8	255.4	102.8	8
KCTS-TV	Seattle, WA	9	375.3	272.5	0
KIRO-TV	Seattle, WA	7	378.9	272.8	0
KNIN-TV	Caldwell, ID	9	434.8	167.2	0
KTVB-TV	Boise, ID	7	434.9	167.2	0
KGW-TV	Portland, OR	8	474.6	243.3	0
DTV-8	Pendleton, OR	8	210.9	195.7	2484

Table 3
Population Served

Station	DTV Service During Transition (people)	Current Service (people)	Additional Interference From Spokane DTV-8 (people and % of service)	
KSPS-TV	dna	518,000	253	(0.05% of current service)
KPAX-TV	dna	127,000	8	(0.01% of current service)
Pendleton DTV-8	267,000	260,000	2484	(0.93% of DTV service)

Notes:
1) Data in the "DTV Service" and "Current Service" columns is taken from Appendix B of the Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order in MM Docket 87-268.

International Allocation Considerations

A review has been made of the Canadian DTV allotment plan, as detailed in the Industry Canada document "DTV (Digital Television) Transition Allotment Plan", dated June 1998. None of the planned regular and low-power Canadian DTV allotments on channels 7, 8 or 9 are believed to be located close enough to the proposed Spokane DTV-8 allotment to warrant an interference analysis.

Canadian analog station CKTN-TV operates on NTSC channel 8 at Trail, British Columbia. The CKTN-TV transmitter site is located 173 kilometers from the proposed Spokane DTV-8 allotment, at 347° True.

A detailed interference study has been conducted to determine whether the proposed Spokane DTV-8 allotment will cause interference to the operation of CKTN-TV. The results of this study are depicted in the attached map Exhibits 1 through 3. These studies were performed using the Longley-Rice version 1.2.2 computer code, as implemented in the software program SIGNAL™, from EDX Software, Inc. The technical parameters for CKTN-TV were taken from the most recent version of the Canadian television facilities database. A summary of the CKTN-TV technical parameters, along with a plot of the CKTN-TV directional antenna pattern, is included as Exhibit 4.

Exhibit 1 depicts a Grade B coverage analysis for CKTN-TV. On this map, red shading indicates areas which are predicted to receive a 56 dBu F(50,50) signal from CKTN-TV. Trail

is located in an extremely rugged and mountainous area, where inhabitable areas are limited to relatively narrow strips of land along the Columbia and Kootenai Rivers, and other small rivers which ultimately feed into the Columbia. As Exhibit 1 demonstrates, this rugged terrain significantly restricts the coverage of CKTN-TV to the immediate Trail area. CKTN-TV provides Grade B service to perhaps 20% of the area within its Grade B contour.

Exhibit 2 depicts the predicted 22 dBu F(50,10) interfering signal (green shading) from the proposed Spokane DTV-8 allotment, with respect to the CKTN-TV Grade B contour. This exhibit does show that several areas which are within the CKTN-TV Grade B contour, and which are north of the US-Canada border[2], are predicted to receive an interfering signal from the Spokane DTV-8 allotment. However, these areas are all located atop high, mountainous terrain, and are uninhabitable.

Exhibit 3 depicts a ratio study between the CKTN-TV 56 dBu F(50,50) signal and the Spokane DTV-8 22 dBu F(50,10) signal. On this map, purple shading indicates areas where the CKTN-TV signal is 34 dB higher than the Spokane DTV-8 signal. A 34 dB C/I ratio is the appropriate cochannel DTV-into-NTSC signal ratio for channels 7 through 13, as described in §73.623(c)(2) of the Commission's Rules. 34 dB is also the cochannel DTV-into-NTSC C/I ratio used to generate the Canadian "DTV (Digital Television) Allotment Plan", and is enunciated in Section B.4 of the document entitled "Digital Television Service Considerations and Allotment

[2]As is described in Paragraph 3.1.2 of the Working Arrangement for Allotment and Assignment of VHF and UHF Television Broadcasting Channels Under the Agreement Between the Government of the United States of America and the Government of Canada Relating to the TV Broadcasting Service, protection to Canadian and United States television stations terminates at the common border.

Principles" (dated August 1997), prepared by the Joint Technical Committee on Advanced Broadcasting (JTCAB) Ad Hoc Group on DTV Planning Parameters.

There is an extremely high correlation between the areas receiving Grade B service from CKTN-TV (as depicted in Exhibit 1), and the areas where the CKTN-TV / Spokane DTV-8 C/I ratio is 34 dB or higher (as depicted in Exhibit 3). The extremely rugged terrain in the area surrounding Trail effectively shields the CKTN-TV service area from interference from the proposed Spokane DTV-8 allotment. Therefore, it is believed that the proposed Spokane DTV-8 allotment fully protects the operation of CKTN-TV, and complies with Canadian DTV allotment criteria.

Canadian Concurrence

Since Spokane is located within 400 kilometers of the US-Canadian border, concurrence of the Canadian government will be required. Notification of this proposal to Canada is thereby respectfully requested.

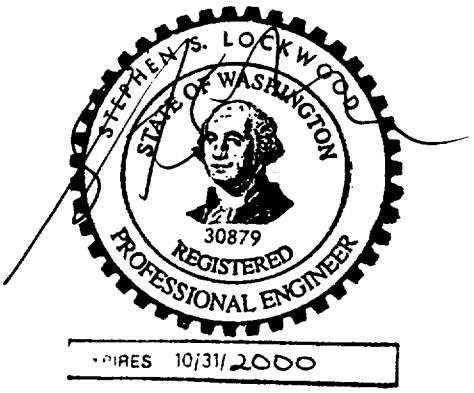
Conclusion

Based on the preceding analysis, it is believed that DTV Channel 8 can be assigned in lieu of DTV Channel 39 for use by KSPS-TV at Spokane, Washington, in full compliance with domestic and international DTV allotment criteria.

CERTIFICATION

This Engineering Statement supporting a Petition for Rulemaking to revise the Table of Allotments to specify DTV Channel 8 in lieu of DTV Channel 39 for use at Spokane, Washington has been prepared on behalf of Spokane School District #81. All representations herein are true to the best of my knowledge. I am an experienced radio engineer whose qualifications are a matter of record with the Federal Communications Commission. I am a partner in the firm of Hatfield & Dawson Consulting Engineers and am Registered as a Professional Engineer in the States of Washington and Alaska.

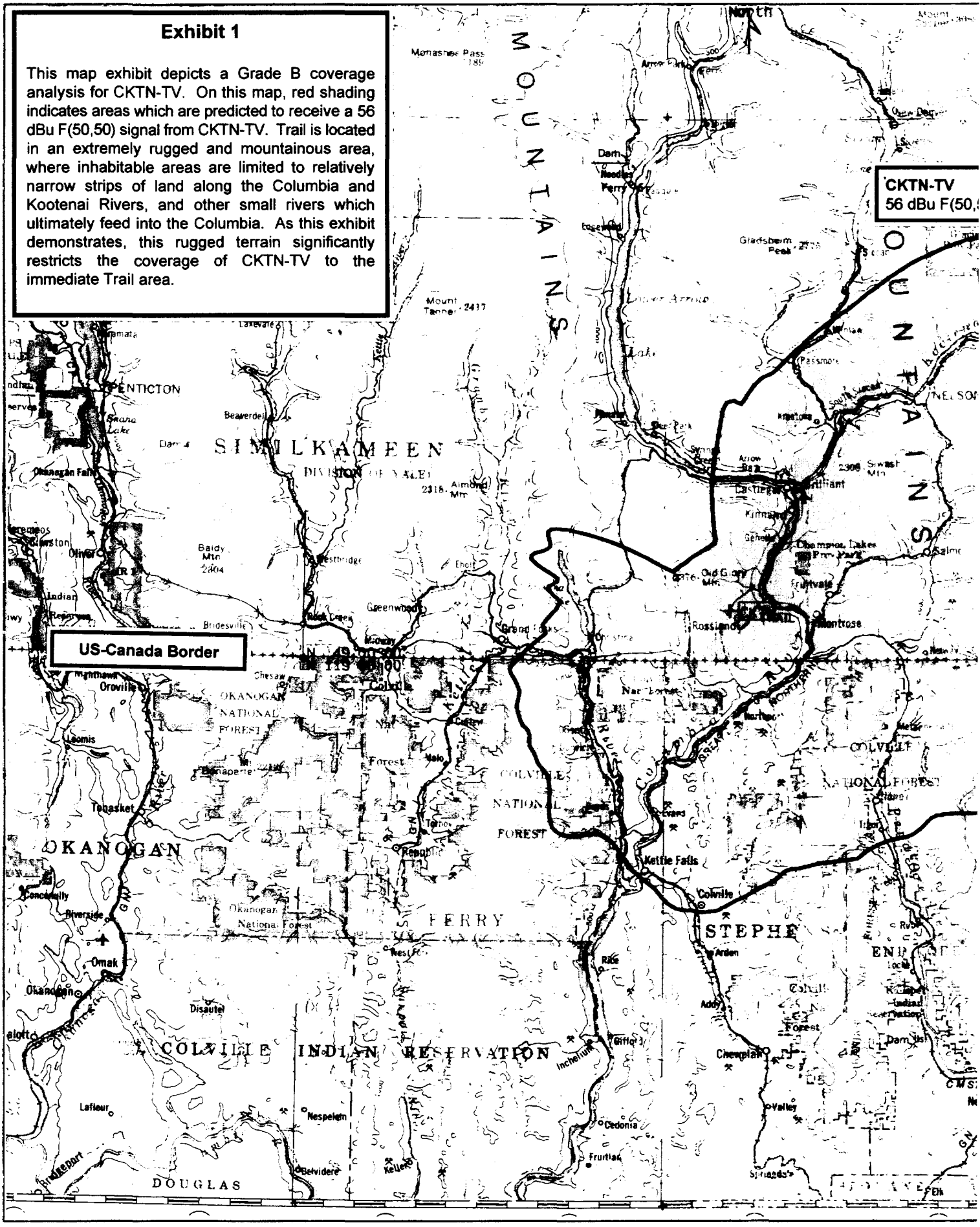
Signed this 16th day of November, 1998.

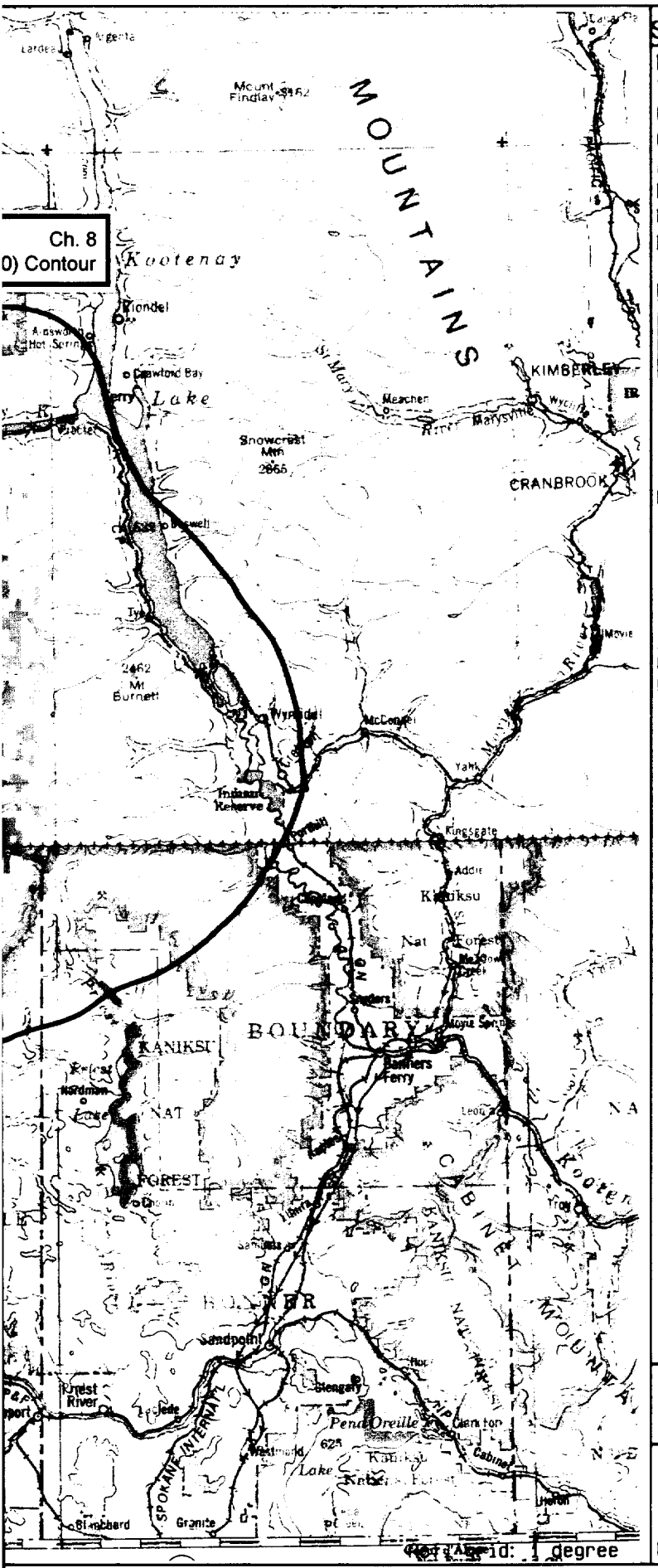


Stephen S. Lockwood, P.E.

Exhibit 1

This map exhibit depicts a Grade B coverage analysis for CKTN-TV. On this map, red shading indicates areas which are predicted to receive a 56 dBu F(50,50) signal from CKTN-TV. Trail is located in an extremely rugged and mountainous area, where inhabitable areas are limited to relatively narrow strips of land along the Columbia and Kootenai Rivers, and other small rivers which ultimately feed into the Columbia. As this exhibit demonstrates, this rugged terrain significantly restricts the coverage of CKTN-TV to the immediate Trail area.





SIGNAL (tm) : D: \KSPS\KSPS.MAP

Propagation model: Longley-Rice v1.2.2
Time: 50.00% Loc: 50.00% Margin: .0 dB
Climate: Continental Temperate
Gndcvr: None
Atm. factor: None
K Factor: 1.333
RX Antenna: Omni
Height: 9.1 mtrs AGL Gain: .0 dBd

Field strength (at remote)

> 56.0 dBuV/m
< 56.0 dBuV/m

Minimum threshold level: -150.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient.	Coordinates
CKTN *	1573.0	42.55	DA-H	N 49 5 30.00
grp: 1	180.0000 MHz		.0	W117 49 10.00

KILOMETERS
20 0 20 40

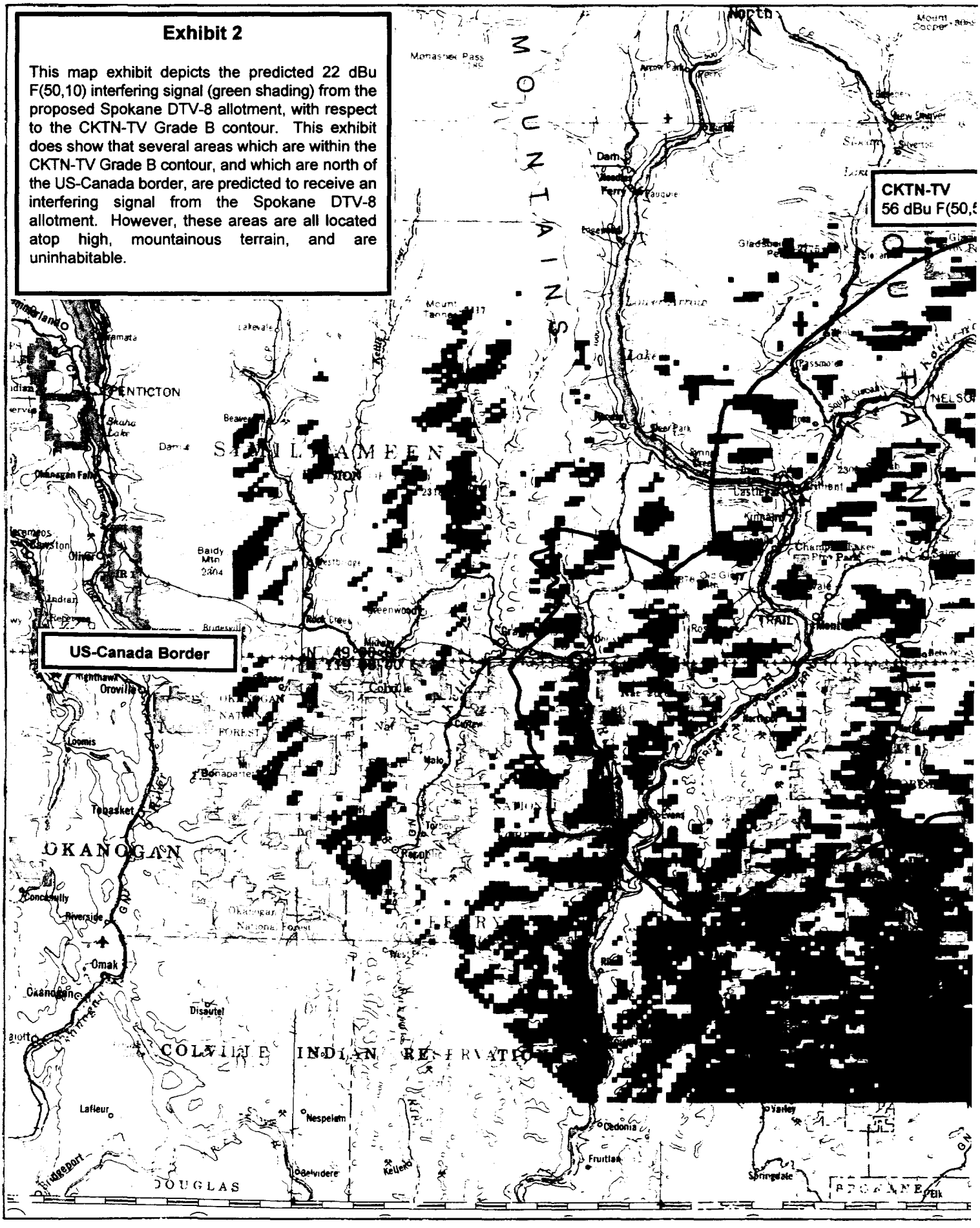
CKTN Coverage

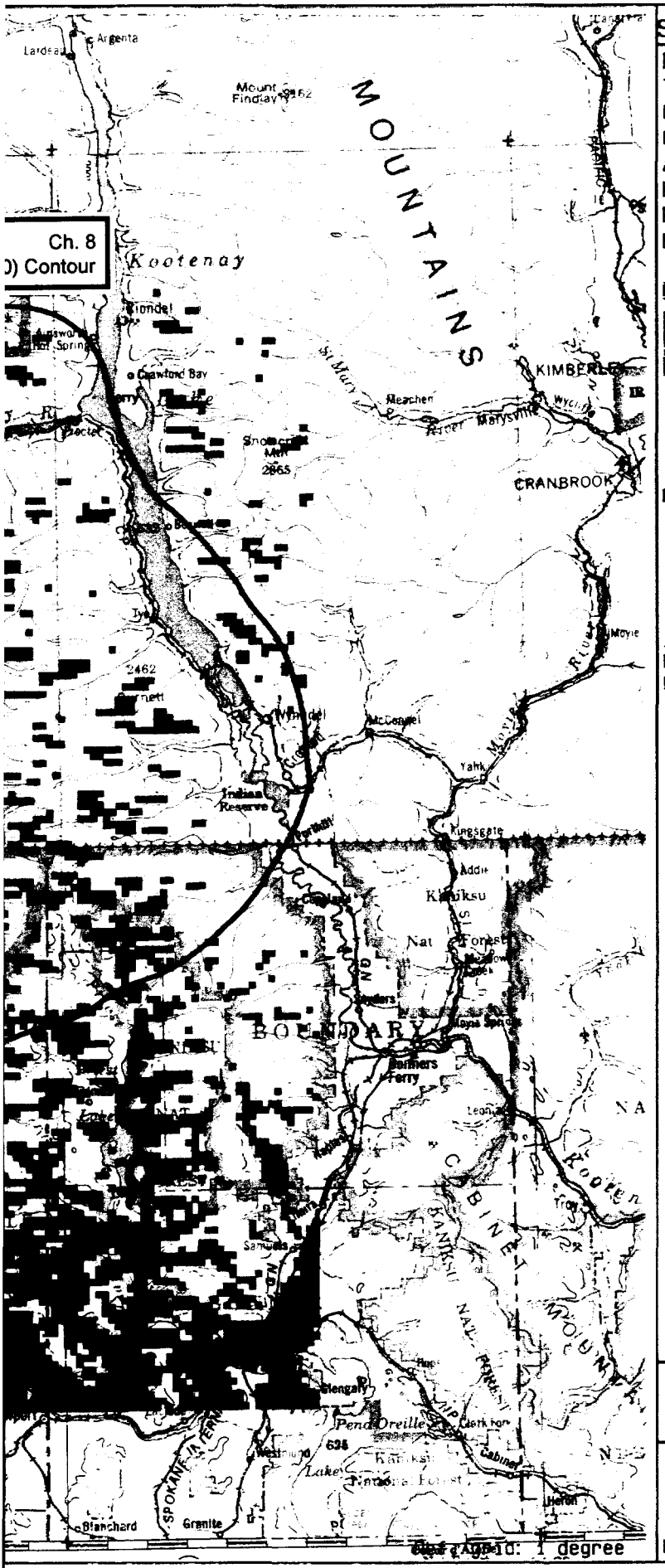
Hatfield and Dawson

Nov 1998 Exhibit

Exhibit 2

This map exhibit depicts the predicted 22 dBu F(50,10) interfering signal (green shading) from the proposed Spokane DTV-8 allotment, with respect to the CKTN-TV Grade B contour. This exhibit does show that several areas which are within the CKTN-TV Grade B contour, and which are north of the US-Canada border, are predicted to receive an interfering signal from the Spokane DTV-8 allotment. However, these areas are all located atop high, mountainous terrain, and are uninhabitable.





SIGNAL (tm) : D: \KSPS\KSPS.MAP

Propagation model: Longley-Rice v1.2.2
Time: 10.00% Loc: 50.00% Margin: .0 dB
Climate: Continental Temperate
Gndcvr: None
Atm. factor: None
K Factor: 1.333
RX Antenna: Omni
Height: 9.1 mtrs AGL Gain: .0 dBd

Field strength (at remote)

> 22.0 dBuV/m
< 22.0 dBuV/m

Minimum threshold level: -150.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient.	Coordinates
KSPS *	1274.0	43.34	OM-H	N 47 34 34.00
grp: 1	180.0000 MHz			W117 17 58.00

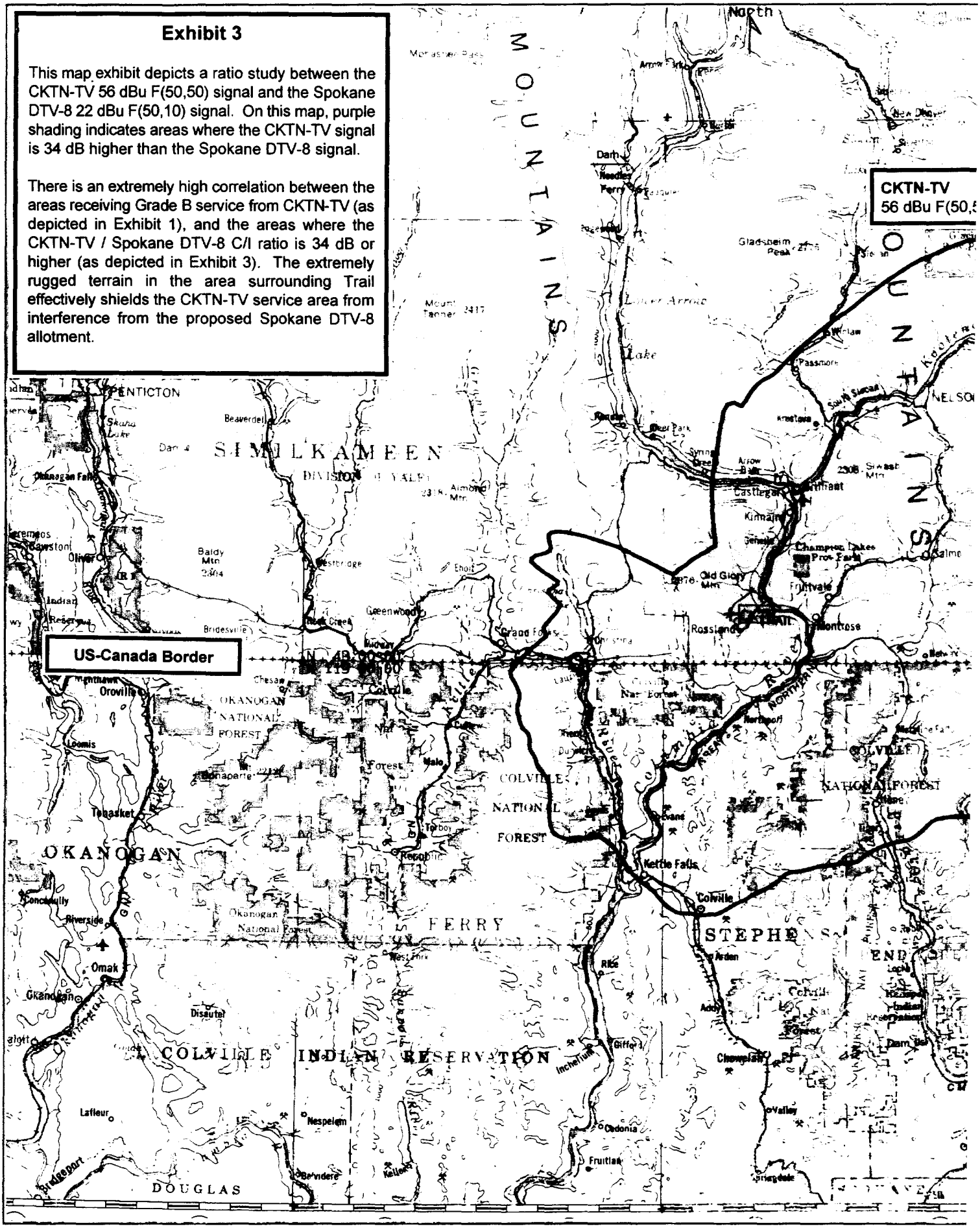
KILOMETERS
20 0 20 40

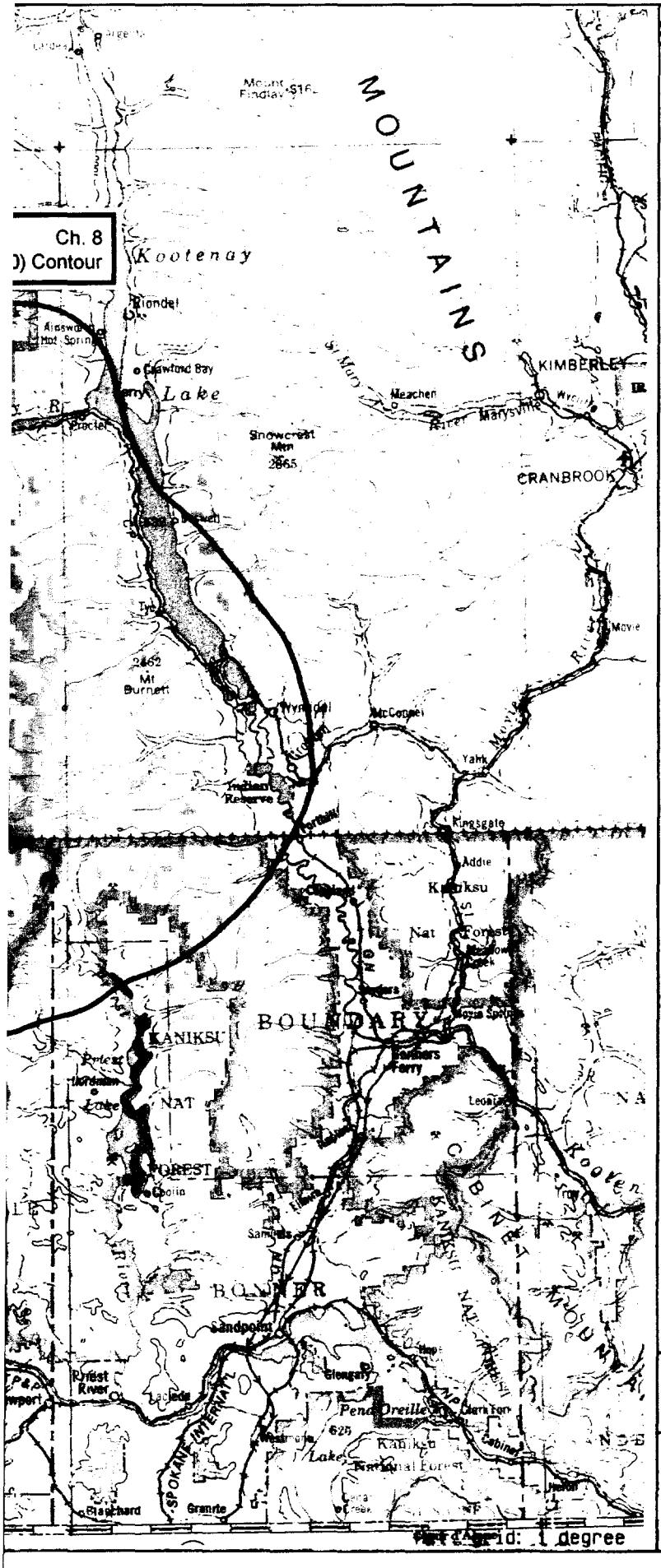
KSPS DTV-8 Int. Signal
Hatfield and Dawson
Nov 1998 Exhibit

Exhibit 3

This map exhibit depicts a ratio study between the CKTN-TV 56 dBu F(50,50) signal and the Spokane DTV-8 22 dBu F(50,10) signal. On this map, purple shading indicates areas where the CKTN-TV signal is 34 dB higher than the Spokane DTV-8 signal.

There is an extremely high correlation between the areas receiving Grade B service from CKTN-TV (as depicted in Exhibit 1), and the areas where the CKTN-TV / Spokane DTV-8 C/I ratio is 34 dB or higher (as depicted in Exhibit 3). The extremely rugged terrain in the area surrounding Trail effectively shields the CKTN-TV service area from interference from the proposed Spokane DTV-8 allotment.





SIGNAL (tm): D: \KSPS\KSPS.MAP

Propagation model: Longley-Rice v1.2.2
Time: 50.00% Loc: 50.00% Margin: .0 dB
Climate: Continental Temperate
Gndcvr: None
Atm. factor: None
K Factor: 1.333
RX Antenna: Omni
Height: 9.1 mtrs AGL Gain: .0 dBd

C/I ratio - group 1 TXs to group 2 TXs

> 34.0
< 34.0

Minimum threshold level: -150.0 dBmW

Site	Ant Elv AMSL (mtrs)	ERPd (dBW)	Ant. Type /Orient.	Coordinates
KSPS	1274.0	43.34	OM-H	N 47 34 34.00
grp: 2	180.0000 MHz			W117 17 58.00
CKTN *	1573.0	42.55	DA-H	N 49 5 30.00
grp: 1	180.0000 MHz		.0	W117 49 10.00

KILOMETERS
20 0 20 40

CKTN Int. Study

Hatfield and Dawson

Nov 1998 Exhibit

Exhibit 4

CKTN-TV Technical Parameters

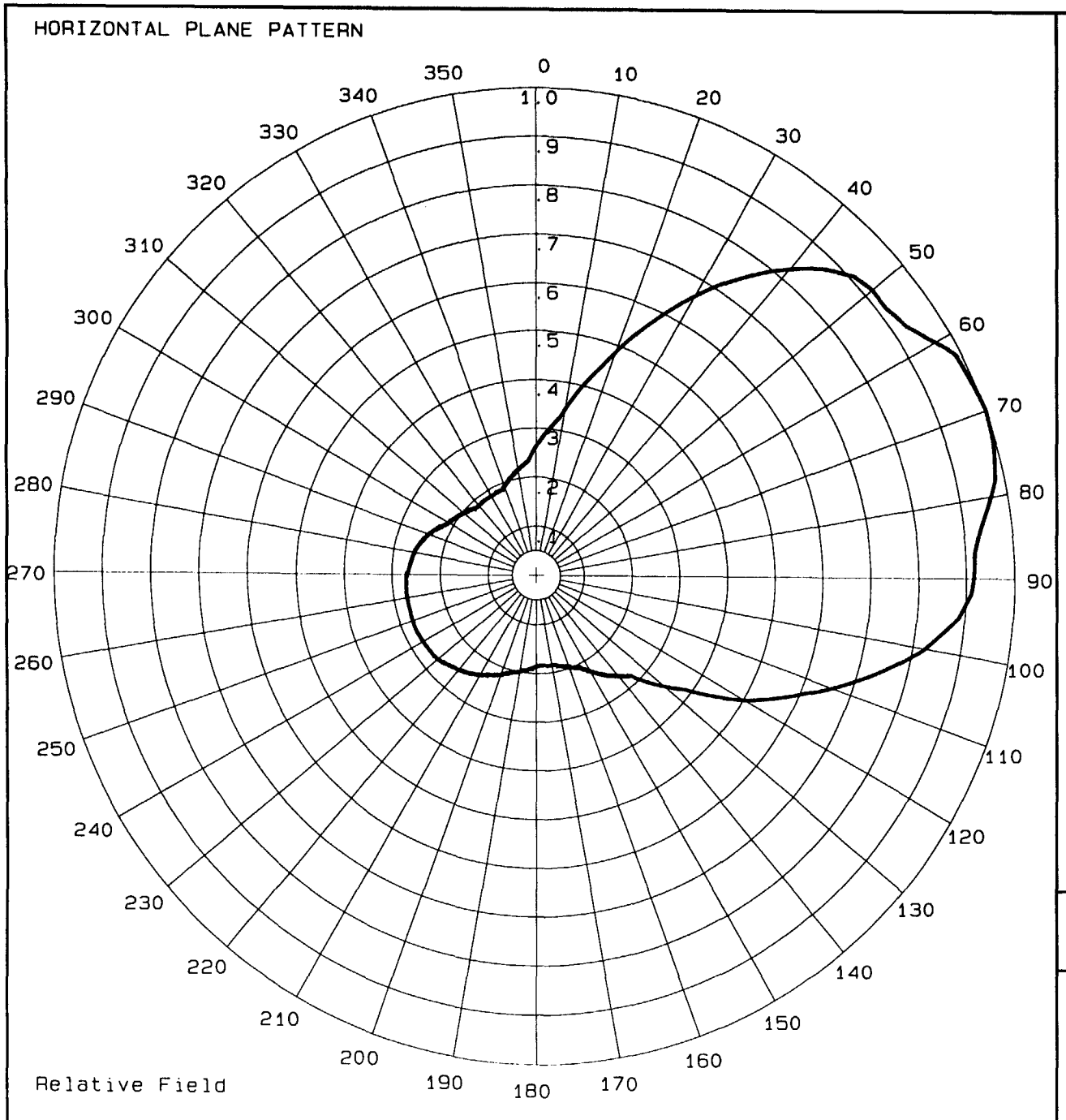
CANTV.EXE Copyright 1997, Hatfield & Dawson, Inc. Version 1.50

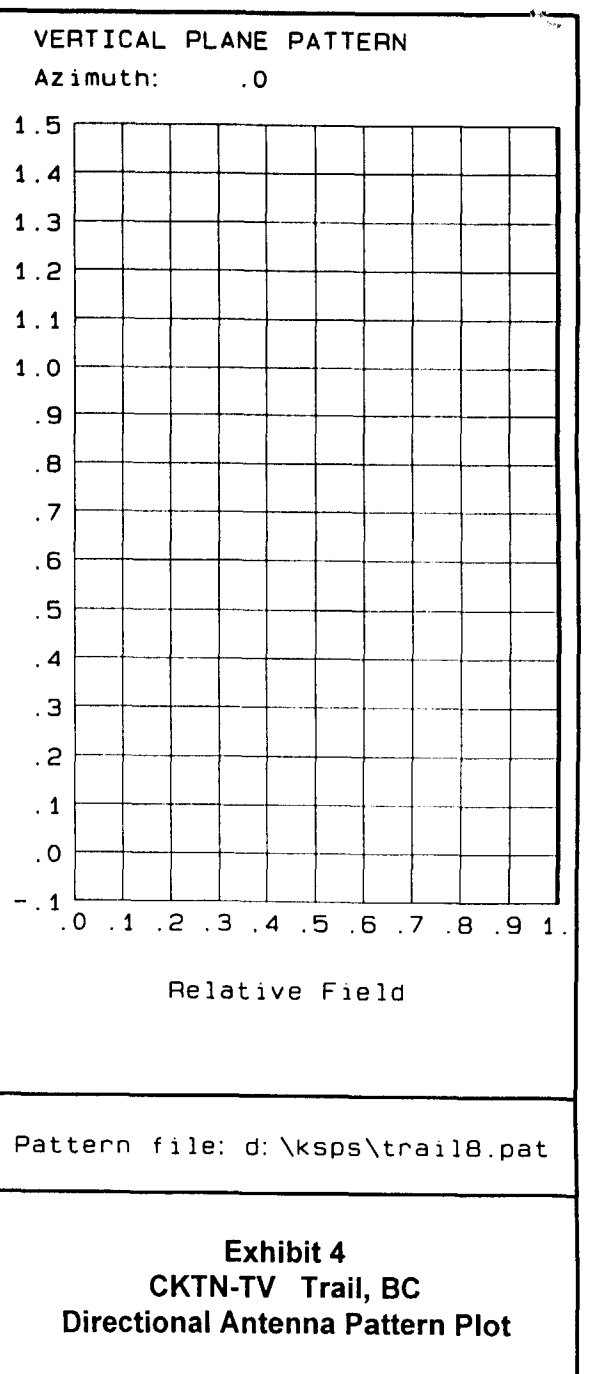
Basic Station Data

Station:	CKTN-TV	City:	TRAIL
Channel:	8	Province:	BC
Offset:	+		
Zone:	2	Coordinates:	N 49 05 30
Class:	R		W 117 49 10
Status:	OP Operational		
Last Change Date:	19960115		
Vis Peak ERP:	18.000 kW	(12.55 dBk)	
Vis Avg ERP:	4.400 kW		
Aur Peak ERP:	1.800 kW		
Aur Avg ERP:	0.440 kW		
Site AMSL:	1555 m		
Tower O/A AGL:	22 m		
Rad Center AMSL:	1573 m		
HAAT:	471 m		
Beam Tilt:	0.0 degrees		
Tilt Vis Peak ERP:	0.000 kW	(. dBk)	
Tilt Aur Peak ERP:	0.000 kW		
Antenna Mode:	DA		

International

Can-US Border:	10.2 km
Canada Land Edge:	10.2 km
US Land Edge:	10.2 km
French Land Edge:	4434.9 km
Limitation:	L62
Network:	CTV
Broadcast Mode:	
Offset Precision:	
Original Creation Date:	19860121
Rec Mod for Cons Dump:	19960115
File Number:	1645
CRTC Decision Number:	950115
Unattended Operation:	N
Bcasting Certificate #:	TF087
Close Captioning:	N





Pattern file: d:\ksps\trail8.pat

Exhibit 4
CKTN-TV Trail, BC
Directional Antenna Pattern Plot